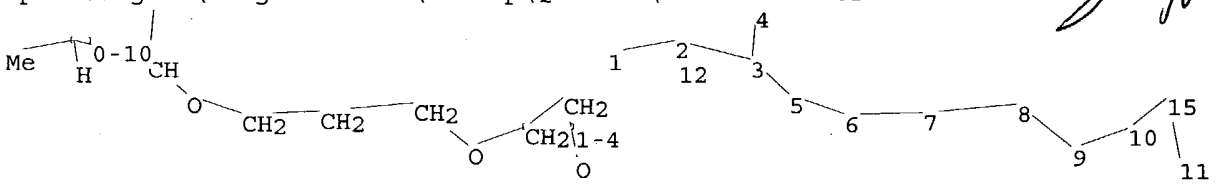
L5 0 SEA SSS FUL L3

=>
Uploading C:\Program Files\Stnexp\Queries\10679 126.str



chain nodes :
1 2 3 4 5 6 7 8 9 10 11 12 15
chain bonds :
1-2 2-3 2-12 3-4 3-5 5-6 6-7 7-8 8-9 9-10 10-15 11-15
exact/norm bonds :
3-5
exact bonds :
1-2 2-3 2-12 3-4 5-6 6-7 7-8 8-9 9-10 10-15 11-15

Match level :
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:CLASS 15:CLASS

L6 STRUCTURE UPLOADED

=> d
L6 HAS NO ANSWERS
L6 STR

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> s l6
SAMPLE SEARCH INITIATED 13:35:29 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 7223 TO ITERATE

13.8% PROCESSED 1000 ITERATIONS 0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 139367 TO 149553
PROJECTED ANSWERS: 0 TO 0

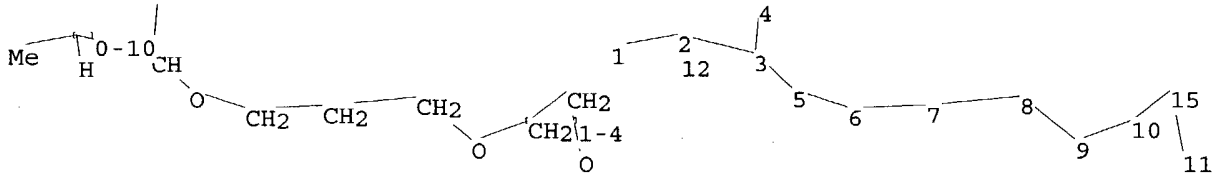
L7 0 SEA SSS SAM L6

=> s l6 full
FULL SEARCH INITIATED 13:35:34 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 142836 TO ITERATE

```
100.0% PROCESSED  142836 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.02

L8             0 SEA SSS FUL L6

=>
Uploading C:\Program Files\Stnexp\Queries\10679 126.str
```




```
chain nodes :
1  2  3  4  5  6  7  8  9  10  11  12  15
chain bonds :
1-2  2-3  2-12  3-4  3-5  5-6  6-7  7-8  8-9  9-10  10-15  11-15
exact/norm bonds :
3-5
exact bonds :
1-2  2-3  2-12  3-4  5-6  6-7  7-8  8-9  9-10  10-15  11-15


Match level :
1:CLASS  2:CLASS  3:CLASS  4:CLASS  5:CLASS  6:CLASS  7:CLASS  8:CLASS  9:CLASS
10:CLASS  11:CLASS  12:CLASS  15:CLASS



L9       STRUCTURE UPLOADED

=> d
L9 HAS NO ANSWERS
L9               STR

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.


=> s l9
SAMPLE SEARCH INITIATED 13:37:30 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -  10950 TO ITERATE

  9.1% PROCESSED    1000 ITERATIONS                                0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:       212732 TO   225268
PROJECTED ANSWERS:               0 TO        0

L10            0 SEA SSS SAM L9

=> s l9 full
FULL SEARCH INITIATED 13:37:35 FILE 'REGISTRY'
```

FULL SCREEN SEARCH COMPLETED - 217346 TO ITERATE

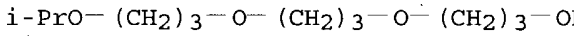
100.0% PROCESSED 217346 ITERATIONS 4 ANSWERS
SEARCH TIME: 00.00.02

L11 4 SEA SSS FUL L9

=> d 104
4 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE
The answer numbers requested are not in the answer set.
ENTER ANSWER NUMBER OR RANGE (1):end

=> d 1-4

L11 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 228718-16-9 REGISTRY
CN 1-Propanol, 3-[3-[3-(1-methylethoxy)propoxy]propoxy]- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C12 H26 O4
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

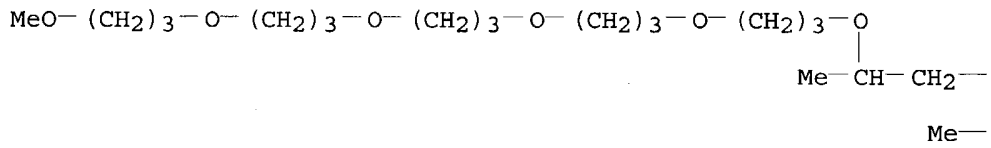


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

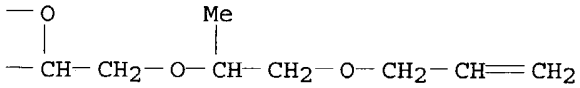
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 218898-40-9 REGISTRY
CN 2,6,10,14,18,22,25,28,31-Nonaoxatetratriacont-33-ene, 23,26,29-trimethyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C28 H56 O9
SR CA
LC STN Files: CA, CAPLUS

PAGE 1-A



PAGE 1-B

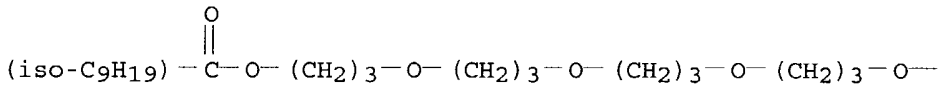


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

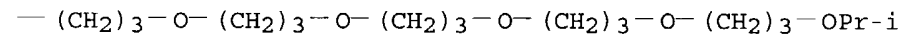
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 122024-29-7 REGISTRY
CN Isodecanoic acid, 37-methyl-4,8,12,16,20,24,28,32,36-nonaoxaoctatriacont-1-yl ester (9CI) (CA INDEX NAME)
MF C40 H80 O11
CI IDS
SR CA
LC STN Files: CA, CAPLUS

PAGE 1-A

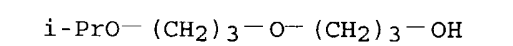


PAGE 1-B



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 54518-03-5 REGISTRY
CN 1-Propanol, 3-[3-(1-methylethoxy)propoxy]- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C9 H20 O3
LC STN Files: BEILSTEIN*, CA, CAPLUS, DETHERM*, HODOC*, SPECINFO
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	480.06	480.63

FILE 'CAPLUS' ENTERED AT 13:38:11 ON 22 APR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

FILE COVERS 1907 - 22 Apr 2004 VOL 140 ISS 17
FILE LAST UPDATED: 21 Apr 2004 (20040421/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l11
L12 4 L11

=> d ibib abs hitstr 1-4

L12 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:421733 CAPLUS
DOCUMENT NUMBER: 131:89141
TITLE: Preparation of acrylic-based copolymer latex coatings with low environmental toxicity
INVENTOR(S): Sugerman, Gerald
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

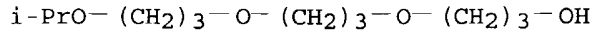
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9932563	A2	19990701	WO 1997-US24224	19971219
W: AU, BR, CA, HU, JP, MX, NO, RU, SE, SG, TR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2314975	AA	19990701	CA 1997-2314975	19971219
AU 9860143	A1	19990712	AU 1998-60143	19971219
BR 9714916	A	20001226	BR 1997-14916	19971219

PRIORITY APPLN. INFO.: WO 1997-US24224 A 19971219

AB Low- or no VOC acrylic and vinyl copolymer latex, useful for coatings, paints and inks, is prepared by using nonvolatile reactive amines as neutralizers, (non)hydroxyl-containing unsatd. esters and/or ethers and/or ether-esters and saturated hydroxyl-containing etherified and/or esterified oligomeric glycols and/or oligools as coalescents, and hypersurfactants replacing volatile amines and/or ammonia, organic solvents, and conventional soaps and/or dispersants and/or detergents, resp.

IT **228718-16-9**
RL: NUU (Other use, unclassified); USES (Uses)
(coalescents; preparation of acrylic-based copolymer latex coatings with low environmental toxicity)

RN 228718-16-9 CAPLUS
CN 1-Propanol, 3-[3-[3-(1-methylethoxy)propoxy]propoxy]- (9CI) (CA INDEX NAME)



L12 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:771238 CAPLUS
DOCUMENT NUMBER: 130:83889
TITLE: Additives for refrigerator oils
INVENTOR(S): Furukawa, Yutaka; Kodera, Masami
PATENT ASSIGNEE(S): Asahi Glass Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10316985	A2	19981202	JP 1997-130087	19970520

PRIORITY APPLN. INFO.: JP 1997-130087 19970520

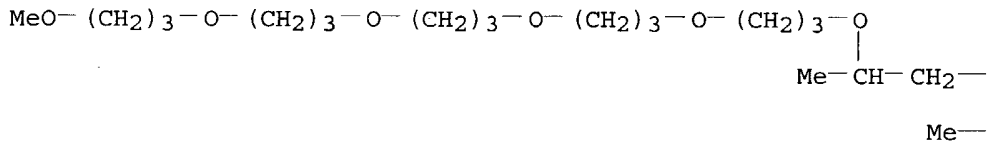
AB Additives for refrigerator oils are silicone compds. having required organosiloxane units which directly bond to Si atom with monovalent polyfluoro hydrocarbyl group [e.g., C8F17(CH2)3-] and organosiloxane units which directly bond to Si atom with oxyhydrocarbyl-containing group.

IT **218898-40-9DP**, reaction products with dimethylsilanediol-methylsilanediol copolymer and F-containing vinyl compds.
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(additives for refrigerator oils)

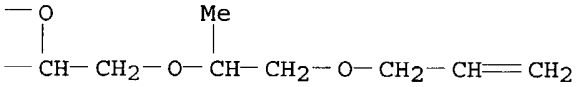
RN 218898-40-9 CAPLUS

CN 2,6,10,14,18,22,25,28,31-Nonaoxatetratriacont-33-ene, 23,26,29-trimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L12 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:480100 CAPLUS
DOCUMENT NUMBER: 111:80100
TITLE: Inks for dot printer ink ribbon
INVENTOR(S): Goto, Hiroyuki; Higaki, Yuzo; Fujimoto, Takane
PATENT ASSIGNEE(S): Nisshin Oil Mills Ltd., Japan; Dynic Corp.

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63273675	A2	19881110	JP 1987-108039	19870430
JP 08032842	B4	19960329		

PRIORITY APPLN. INFO.: JP 1987-108039 19870430

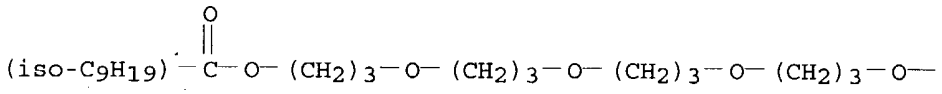
AB The title inks contain RCO2(CH2CHXO)nR' [R = C≥7 (hydroxy)alkyl, (hydroxy)alkenyl; X = H, Me; R' = C≤10 alkyl, Ph; n = 1-10]. Thus, C.I. Solvent Yellow 19 0.5, C.I. Solvent Red 23 1.2, C.I. Solvent Blue 121 0.4, C.I. Solvent Black 22 1.4, triethylene glycol Me ether pelargonate 95, and additives 0.6% were mixed to give an ink with good storage stability and color d.

IT **122024-29-7**
RL: USES (Uses)
(inks containing, for dot printer ribbon, with high color d. and storage stability)

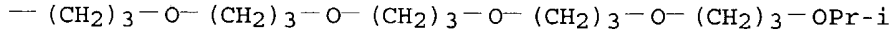
RN 122024-29-7 CAPLUS

CN Isodecanoic acid, 37-methyl-4,8,12,16,20,24,28,32,36-nonaoxaoctatriacont-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L12 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1982:34816 CAPLUS
DOCUMENT NUMBER: 96:34816
TITLE: Stabilization of alkenylanilines
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56115745	A2	19810911	JP 1980-18572	19800219
JP 62003834	B4	19870127		

PRIORITY APPLN. INFO.: JP 1980-18572 19800219

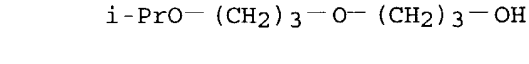
AB Alkenylanilines in mixture with phenols were stabilized by addition of >10 weight%

saturated aliphatic alcs., ethers, esters, or aromatic alcs. Thus, 100 weight parts of
an 1:1 mixture of PhOH and 4-isopropenylaniline (99.5% purity) was mixed with 100 weight parts HOCH2CH2OH and the mixture kept 6 h at 50° to show 1.0% polymer and 0.1% 2-(4-hydroxyphenyl)-2-(4-aminophenyl)propane, vs. 55.2 and 40.1%, resp., without a stabilizer.

IT **54518-03-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(stabilizer, for alkenylaniline)

RN 54518-03-5 CAPLUS

CN 1-Propanol, 3-[3-(1-methylethoxy)propoxy]- (9CI) (CA INDEX NAME)



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=> file beilstein
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    19.46     500.09

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                    -2.77      -2.77

FILE 'BEILSTEIN' ENTERED AT 13:38:43 ON 22 APR 2004
COPYRIGHT (c) 2004 Beilstein-Institut zur Foerderung der Chemischen Wissenschaften
licensed to Beilstein GmbH and MDL Information Systems GmbH

FILE RELOADED ON OCTOBER 20, 2002
FILE LAST UPDATED ON MARCH 30,2004

FILE COVERS 1771 TO 2003.
*** FILE CONTAINS  8,932,479 SUBSTANCES ***

>>> PLEASE NOTE: Reaction data and substance data are stored in
    separate documents and can not be searched together in one
    query.
    Reaction data for BEILSTEIN compounds may be displayed
    immediately with the display codes PRE (preparations) and REA
    (reactions). A substance answer set retrieved after the search
    for a chemical name, a molecular formula or a structure search
    for example can be restricted to compounds with available
    reaction information by concatenation with PRE/FA, REA/FA or
    more general with RX/FA. The BEILSTEIN Registry Number (BRN)
    is the link between a BEILSTEIN compound and belonging reactions.
    For more detailed reaction searches BRNs can be selected from
    substance answer sets and searched in the next step as reaction
    partner BRNs - Reactant (RX.RBRN) or Product BRN (RX.PBRN).
    After a search for reaction details substance documents
    associated with reactants or products may be retrieved by
    searching RX.PBRNs or RX.RBRNs as BRNs. <<<


>>> FOR SEARCHING PREPARATIONS SEE HELP PRE  <<<

*********************************************************************
* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST.                *
* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE   *
* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE          *
* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS.                        *
```

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* FOR PRICE INFORMATION SEE HELP COST                                  *
************************************************************************

=> d his

     (FILE 'HOME' ENTERED AT 13:23:21 ON 22 APR 2004)

     FILE 'STNGUIDE' ENTERED AT 13:23:37 ON 22 APR 2004

     FILE 'REGISTRY' ENTERED AT 13:27:05 ON 22 APR 2004
L1             STRUCTURE UPLOADED
L2             STRUCTURE UPLOADED
L3             STRUCTURE UPLOADED
L4           0 S L3
L5           0 S L3 FULL
L6             STRUCTURE UPLOADED
L7           0 S L6
L8           0 S L6 FULL
L9             STRUCTURE UPLOADED
L10          0 S L9
L11          4 S L9 FULL

     FILE 'CAPLUS' ENTERED AT 13:38:11 ON 22 APR 2004
L12          4 S L11

     FILE 'BEILSTEIN' ENTERED AT 13:38:43 ON 22 APR 2004

=> s l9 full
FULL SEARCH INITIATED 13:38:55 FILE 'BEILSTEIN'
FULL SCREEN SEARCH COMPLETED - 108754 TO ITERATE

 29.8% PROCESSED   32409 ITERATIONS  (     4 INCOMPLETE)       4 ANSWERS

 57.4% PROCESSED   62407 ITERATIONS  (     5 INCOMPLETE)       6 ANSWERS

 81.1% PROCESSED   88249 ITERATIONS  (     5 INCOMPLETE)       9 ANSWERS

100.0% PROCESSED  108754 ITERATIONS  (     5 INCOMPLETE)       9 ANSWERS
SEARCH TIME: 00.01.09

L13          9 SEA SSS FUL L9

=> s 13/com
'COM' IS NOT A VALID FIELD CODE
L14          0 13/COM

=> d 13/com
'13' MUST END IN '/Q', '/A', '/L', '/S' OR '/B'
The saved name for a query (or structure or screen set) must end with
'/Q'.  The saved name for an answer set must end with '/A'.  The saved
name for an L# list must end with '/L'.  SDI request names must end
with '/S'.  To see a list of all saved query, answer set,, and L# list
names for this loginid, enter "DISPLAY SAVED" at an arrow
prompt (=>).  Enter "DISPLAY SAVED/S" to see a list of SDI request
names.  Enter "DISPLAY SAVED/B" to see a list of BATCH search
requests.

=> s l13/com
L15          4 L13/COM

=> d ide


L15 ANSWER 1 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN
```
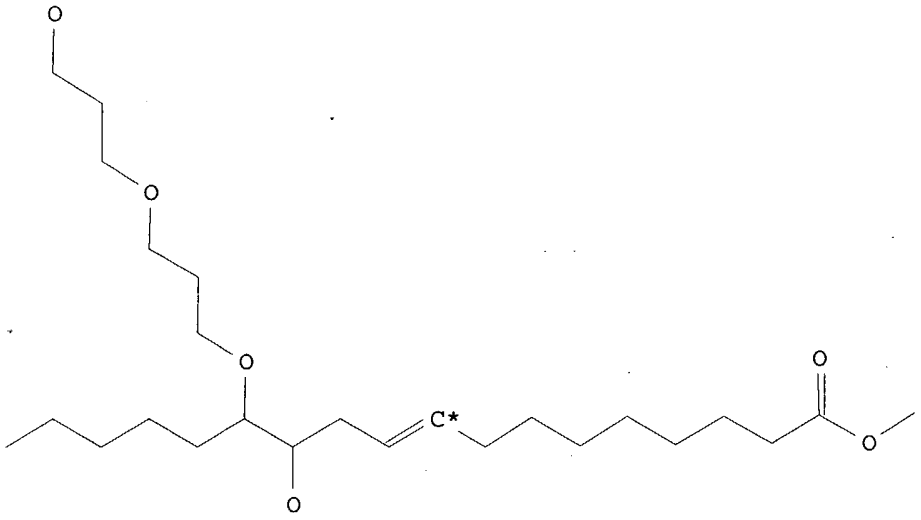

Beilstein Records (BRN):	7826706
Chemical Name (CN):	12-hydroxy-13-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
Autonom Name (AUN):	12-hydroxy-13-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
Molec. Formula (MF):	C25 H48 O6
Molecular Weight (MW):	444.65
Lawson Number (LN):	2077, 523, 289
Compound Type (CTYPE):	acyclic
Constitution ID (CONSID):	6718041
Tautomer ID (TAUTID):	7433744
Beilstein Citation (BSO):	6-03
Entry Date (DED):	1998/04/30
Update Date (DUPD):	1998/05/04



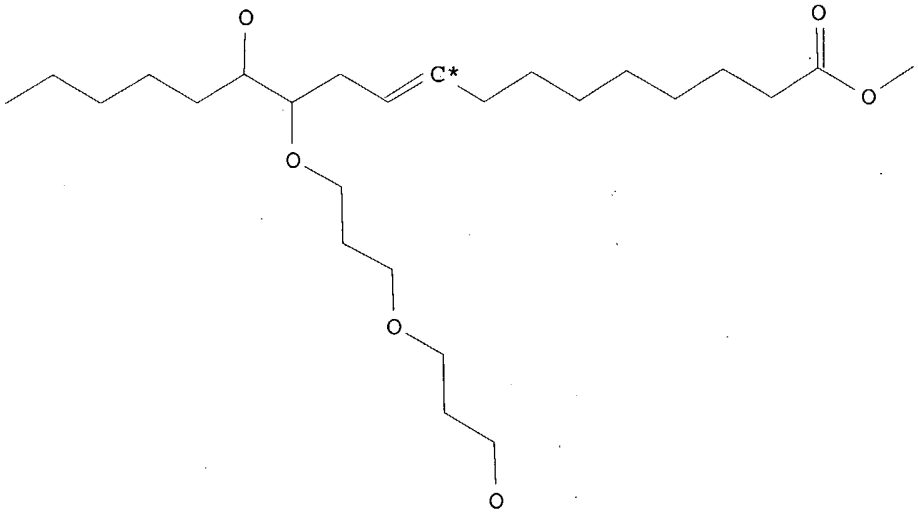
Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	3
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1
MS	Mass Spectrum	1
NMR	Nuclear Magnetic Resonance	1

=> d ide 2

L15 ANSWER 2 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

Beilstein Records (BRN):	7826705
Chemical Name (CN):	13-hydroxy-12-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
Autonom Name (AUN):	13-hydroxy-12-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
Molec. Formula (MF):	C25 H48 O6
Molecular Weight (MW):	444.65
Lawson Number (LN):	2077, 523, 289
Compound Type (CTYPE):	acyclic
Constitution ID (CONSID):	6718254
Tautomer ID (TAUTID):	7433513
Beilstein Citation (BSO):	6-03
Entry Date (DED):	1998/04/30
Update Date (DUPD):	1998/05/04



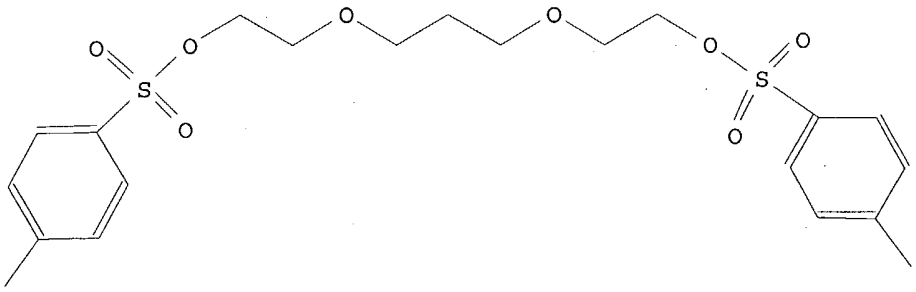
Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	3
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1
NMR	Nuclear Magnetic Resonance	1

=> d ide 3

L15 ANSWER 3 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

Beilstein Records (BRN):	5658971
Chemical Name (CN):	3,7-dioxanonane-1,9-diol ditosylate
Molec. Formula (MF):	C22 H30 O8 S2
Molecular Weight (MW):	486.59
Lawson Number (LN):	13813, 524, 523, 514
Compound Type (CTYPE):	isocyclic
Constitution ID (CONSID):	4966913
Tautomer ID (TAUTID):	5429438
Beilstein Citation (BSO):	6-11
Entry Date (DED):	1993/02/12
Update Date (DUPD):	1993/02/15



Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	4
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1

This substance also occurs in Reaction Documents:

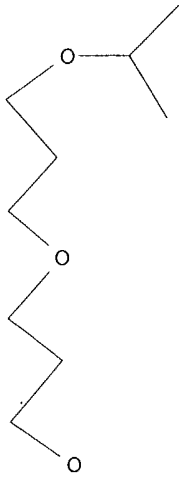
Code	Name	Occurrence
RX	Reaction Documents	2
RXREA	Substance is Reaction Reactant	2

=> d ide 4

L15 ANSWER 4 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

Beilstein Records (BRN):	1849201
Beilstein Pref. RN (BPR):	54518-03-5

CAS Reg. No. (RN):	54518-03-5
Chemical Name (CN):	3-<3-(1-methylethoxy)propoxy>-1-propanol
Autonom Name (AUN):	3-(3-isopropoxy-propoxy)-propan-1-ol
Molec. Formula (MF):	C9 H20 O3
Molecular Weight (MW):	176.26
Lawson Number (LN):	523, 308
Compound Type (CTYPE):	acyclic
Constitution ID (CONSID):	1671846
Tautomer ID (TAUTID):	1744135
Entry Date (DED):	1989/06/29
Update Date (DUPD):	1994/07/22



Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
BPR	Beilstein Preferred RN	1
RN	CAS Registry Number	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	2
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
ED	Entry Date	1
UPD	Update Date	1
XREF	Crossfile Reference	1

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 NEWS  3  JAN 27  Source of Registration (SR) information in REGISTRY updated
                  and searchable
 NEWS  4  JAN 27  A new search aid, the Company Name Thesaurus, available in
                  CA/CAplus
 NEWS  5  FEB 05  German (DE) application and patent publication number format
                  changes
 NEWS  6  MAR 03  MEDLINE and LMEDLINE reloaded
 NEWS  7  MAR 03  MEDLINE file segment of TOXCENTER reloaded
 NEWS  8  MAR 03  FRANCEPAT now available on STN
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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

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DICTIONARY FILE UPDATES:  21 APR 2004  HIGHEST RN 676437-01-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004
```

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Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
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COST IN U.S. DOLLARS SINCE FILE ENTRY 0.42 TOTAL SESSION 0.63

FULL ESTIMATED COST

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FILE COVERS 1907 - 22 Apr 2004 VOL 140 ISS 17
FILE LAST UPDATED: 21 Apr 2004 (20040421/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s catalyst (3w) 100nm
653953 CATALYST
658295 CATALYSTS
837762 CATALYST
(CATALYST OR CATALYSTS)
712 100NM
L1 1 CATALYST (3W) 100NM

=> d

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:635822 CAPLUS
TI Study on the bimetallic catalysts for residue suspended bed hydrocracking
AU Guan, Cuishi; Wang, Zongxian
CS State Key Laboratory of Heavy Oil Processing, University of Petroleum, Dongying Shandong, 257061, Peop. Rep. China
SO Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), PETR-006 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69EKY9
DT Conference; Meeting Abstract
LA English

=> d it

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

=> d ibib abs

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:635822 CAPLUS
TITLE: Study on the bimetallic catalysts for residue suspended bed hydrocracking
AUTHOR(S): Guan, Cuishi; Wang, Zongxian
CORPORATE SOURCE: State Key Laboratory of Heavy Oil Processing, University of Petroleum, Dongying Shandong, 257061, Peop. Rep. China
SOURCE: Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), PETR-006. American Chemical Society: Washington, D. C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB The bimetallic catalyst, derived from water-soluble precursors, was used for upgrading Kelamayi AR at an initial H2 pressure of 7.0Mpa, 436oC, for 1 h. No coking (toluene insolubles <1wt%), and high yield of the distillates (<450oC, about 60wt%) show that the catalyst has a high activity in inhibiting coking and hydrocracking. The optimal concns. of Mo and Fe in the bimetallic catalysts are 15.apprx.25ppm and 1100.apprx.1300ppm in the studied range resp. The Mo-Fe bimetallic catalyst recovered after sulfuration reaction was analyzed by XPS and XRD and TEM. XPS anal. confirms that Mo and Fe are present as molybdenum sulfide and iron sulfide. About 46% of Molybdenum is in the state of MoS2 and 54% is in the state of MoO3 after the sulfuration reaction according to the spectrum of XPS. XRD anal. offers a hypothesis that the nature of synergism between Mo and Fe in the bimetallic catalyst is "phys. and chemical dispersion", which can inhibit the crystals to grow up. Compared with the grain of oil-soluble catalysts (20.apprx.50nm), the ones of water-soluble **catalysts** (about **100nm**) reclaimed after sulfuration reaction are large, as showing in the TEM spectrum.

=> d his

(FILE 'HOME' ENTERED AT 17:12:18 ON 22 APR 2004)

FILE 'REGISTRY' ENTERED AT 17:12:26 ON 22 APR 2004

FILE 'CAPLUS' ENTERED AT 17:12:40 ON 22 APR 2004
L1 1 S CATALYST (3W) 100NM

=> s pore size (s) catalyst
118358 PORE
66930 PORES
160117 PORE
(PORE OR PORES)
845304 SIZE
113850 SIZES
907070 SIZE
(SIZE OR SIZES)
35023 PORE SIZE
(PORE(W)SIZE)
653953 CATALYST
658295 CATALYSTS
837762 CATALYST
(CATALYST OR CATALYSTS)

```
L2        2856 PORE SIZE (S) CATALYST

=> s l2 and 1000nm
           76 1000NM
L3          0 L2 AND 1000NM

=> s l2 and 1000
        352007 1000
L4         158 L2 AND 1000

=> d ibib abs hitstr

L4   ANSWER 1 OF 158  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        2004:59758  CAPLUS
DOCUMENT NUMBER:         140:79582
TITLE:                   Selective para-alkylation of ethylbenzene to
                         p-alkylethylbenzene over pore-size-regulated
                         high-silica gallium-exchanged zeolites
INVENTOR(S):             Bhat, Yajnavalkya Subray; Das, Jagannath; Halgeri,
                         Anand Bhimarao; Bhardwaj, Ishwar Singh
PATENT ASSIGNEE(S):      Indian Petrochemicals Corp. Ltd., India
SOURCE:                  Indian, 17 pp.
                         CODEN: INXXAP
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     IN 178216          A    19970315       IN 1994-BO58     19940221
PRIORITY APPLN. INFO.:                   IN 1994-BO58        19940221
AB   Production of para-alkylethylbenzenes with high (95-100%) para-selectivity is
     carried out by selective p-alkylation of ethylbenzene, especially with a
     suitable alc., at 523-723 K in the presence of an acid-form high-silica
     (Si-Al ratio 70-500:1) zeolite composite consisting of amorphous silica
     and a galloaluminosilicate (Si-Ge ratio 1000-1500:1) treated
     with tetra-Et orthosilicate to control the pore size.  P-Alkylethylbenzene
     is separated as the heavier bottoms product of the reaction mixture, in which
     unreacted ethylbenzene is the lighter overhead or top product.  The
     preferred product is p-diethylbenzene upon alkylation of ethylbenzene with
     EtOH at 1-40:1 mol ratio ethylbenzene-EtOH and weight space velocity of
     0.5-10 h-1.


=> d ibib abs 155-158

L4   ANSWER 155 OF 158  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        1962:28672  CAPLUS
DOCUMENT NUMBER:         56:28672
ORIGINAL REFERENCE NO.:  56:5441g-h,5442a
TITLE:                   Alumina catalyst of high surface area
INVENTOR(S):             Bertolacini, Ralph J.
PATENT ASSIGNEE(S):      Standard Oil Co.
DOCUMENT TYPE:           Patent
LANGUAGE:                Unavailable
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     US 3009885              19580000       US
AB   The surface area of an AlO3 catalyst is increased by treating with 5-98%
     by weight H2O2 in a H2O2:-Al2O3 ratio of 0.1-10.  An Al2O3 hydrosol containing
```

6.4% Al2O3 is prepared (U.S. 2,274,634, CA 36, 47045). A portion is dried for 4 hrs. at 400° F. and calcined for 6 hrs. at **1000** ° F. To another portion, enough H2O2 (30%) is added to give a H2O2:Al2O3 weight ratio of 1:1. The mixture is stirred for 1 hr. at ambient temperature and atmospheric pressure, dried for 4 hrs. at 400° F., and calcined for 6 hrs. at **1000**.degree. F. The surface area, micro-pore volume, and average pore diameter are 341 sq. m./g., 0.506 cc./g., and 60.2 A., resp., for the treated Al2O3 and 231 sq. m./g., 0.433 cc./g., and 75.1 A., resp., for the untreated portion. The activity and regenerating properties of a Pt-Cl catalyst are improved when H2O2-treated Al2O3 is used in its preparation

L4 ANSWER 156 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1960:31388 CAPLUS
DOCUMENT NUMBER: 54:31388
ORIGINAL REFERENCE NO.: 54:6112b-f
TITLE: Manufacture of lubricants by irradiation of hydrocarbons
PATENT ASSIGNEE(S): Esso Research and Engineering Co.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 823099		19591104	GB	

AB Lubricants, with viscosities from 45 to **1000** Saybolt Universal sec. at 210°F. and viscosity indexes >100 are prepared by subjecting paraffinic hydrocarbons to high-intensity ionizing radiation comprising a slow neutron flux of 1011-1016 neutrons/sq. cm./sec. and a γ-ray flux of 104 to 6 + 108 r./hr. in the presence of subdivided inorg. solids. C10-C18 hydrocarbons are preferred. The inorg. solids are metals or metal oxides with surface areas of 50-600 (preferably 100-300) sq. m./g. and pore sizes of 20-150 (preferably 30-100)A. The metals include Al, Mg, Ti, V, Si, Pt, Cr, Ni, Fe, and Cu. For example, equal vols. of cetane and a catalyst were irradiated for 10 days in an atomic pile having a total power of 24 mega-w. and the following flux distribution at the point of irradiation: slow-neutron flux (0.03 e.v.) 2.5 + 1012 neutrons/sq. cm./sec., fast-neutron flux (>1 m.e.v.) 0.5 + 1012 neutrons/sq. cm./sec., and γ-ray intensity 1.7 + 106 r./hr. The temperature was 350-400°F. and the pressure 1 atmospheric One catalyst tested was freshly calcined 13% Al2O3 on SiO2 in the form of 3/16 + 3/16-in. cylinders with a surface area of 500 sq. m./g. Another **catalyst** contained 0.6% Pt and 0.6% Cl on alcoholate Al2O3; it had a surface area of about 300 sq. m./g. and a **pore size** of 50-80 A. The % yields of products from irradiation using the 2 catalysts were as follows: wet gas (7.6, 8.2); liquids b. <430°F. (6.7, 19.8); b. 430-540° (2.6, 5.1); b. 540-60° (17.2, 22.2), b. >560° (62.3, 41.1), and C (3.5, 3.5). The cuts b. >560° were evaluated as lubricating oil stocks. The products produced by use of the 2 catalysts had the following resp. properties: Saybolt Universal viscosity at 100°F. (1573.5, 322.6) and at 210°F. (138.8, 63.15); and viscosity index (116, 138).

L4 ANSWER 157 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1958:38632 CAPLUS
DOCUMENT NUMBER: 52:38632
ORIGINAL REFERENCE NO.: 52:6908i,6909a
TITLE: Physical and chemical properties of WS2-catalysts. I. Effect of thermal treatment on the composition and adsorption properties of WS2 prepared by the decomposition of ammonium thiotungstate
AUTHOR(S): Samoilov, S. M.; Rubinshtein, A. M.

SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1957) 1158-65
CODEN: IASKA6; ISSN: 0002-3353
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The effect of heating **catalysts** having an initial composition of WS2.30 in a vacuum or at atmospheric pressure at temperature up to **1000** ° was determined by measuring the adsorption of N, the sp. surface, and the **pore size** and by determining the chemical composition of the samples. The heating brings about the removal of the nonstoichiometric S from the sample. A parallelism was observed between the decrease in the S and an increase in the sp. surface and pore volume A decrease in sp. surface due to recrystn. becomes significant for temps. above 600°.

L4 ANSWER 158 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1951:23648 CAPLUS
DOCUMENT NUMBER: 45:23648
ORIGINAL REFERENCE NO.: 45:4123e-i
TITLE: Effect of heating on the catalytic activity of silica gel
AUTHOR(S): Dzis'ko, V. A.; Vishnevskaya, A. A.; Chesalova, V. S.
CORPORATE SOURCE: Karpov Phys.-Chem. Inst., Moscow
SOURCE: Zhurnal Fizicheskoi Khimii (1950), 24, 1416-19
CODEN: ZFKHA9; ISSN: 0044-4537
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Three silica gel **catalysts** are prepared with the following pore vols. (cc./g.), sp. surfaces (sq.m./g.), and mean **pore sizes** (A.): (A) 0.24, 400, 10; (B) 0.85, 450, 27; (C) 1.05, 540, 20. The pore-size distribution is narrow for A and B but wide for C. Firstly, the effect of heating on the H2O content of the gels is studied between 115 and **1000**.degree.. The total H2O content is determined after heating at 1100°. The adsorbed H2O is determined by weighing after drying at 115°. Water held structurally at various temps. is determined by weighing. Assuming that the structural H2O is held as OH groups covering the surface of the gel (15 + 10-16 sq. cm./OH), one can compute the fraction of surface f covered by OH at all temps. The H2O content follows the decrease in sp. surface; f for B and C stays approx. constant between 450 and **1000**.degree., whereas the sp. surface area drops from 420 and 450 down to 70 and 200, resp. The value of f is about 0.5 in this temperature range. At lower temps., f is higher. At 115°, f = 1.62 for A and 1.1 for C. This indicates the presence of hydrates, in small quantity. For B at 115° and for A and C from 300° on, f is less than unity. Thus the decrease in surface area due to heating corresponds to the evolution of structural H2O, and as a consequence f remains approx. constant Secondly, the hydrolysis of PhCl is used as a test reaction (Boreskov and Dzis'ko, C.A. 45, 2759g) for measuring the effect of heating on the catalytic activity per unit surface area. The latter drops only slightly in the case of A which is not temperature resistant, but in the case of B and C, it increases between 600 and **1000**.degree.. This is due to the fact that the decrease in surface corresponds to the destruction of pores that, because of their small size, do not partake in the reaction. Thus the rate constant decreases less rapidly than the surface area and the activity per unit surface area rises on heating.

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               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 13 APRIL 2004
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                                                   ENTRY    SESSION
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FILE COVERS 1907 - 23 Apr 2004 VOL 140 ISS 18
FILE LAST UPDATED: 22 Apr 2004 (20040422/ED)

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=> s 131:89141/dn
L1 1 131:89141/DN

=> d

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:421733 CAPLUS
DN **131:89141**
TI Preparation of acrylic-based copolymer latex coatings with low environmental toxicity
IN Sugerman, Gerald
PA USA
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9932563	A2	19990701	WO 1997-US24224	19971219
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	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2314975	AA	19990701	CA 1997-2314975	19971219
	AU 9860143	A1	19990712	AU 1998-60143	19971219
	BR 9714916	A	20001226	BR 1997-14916	19971219
PRAI	WO 1997-US24224	A	19971219		

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NEWS 5 FEB 05 German (DE) application and patent publication number format

changes
NEWS 6 MAR 03 MEDLINE and LMEDLINE reloaded
NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 8 MAR 03 FRANCEPAT now available on STN
NEWS 9 MAR 29 Pharmaceutical Substances (PS) now available on STN
NEWS 10 MAR 29 WPIFV now available on STN
NEWS 11 MAR 29 No connect hour charges in WPIFV until May 1, 2004
NEWS 12 MAR 29 New monthly current-awareness alert (SDI) frequency in RAPRA

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MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 13 APRIL 2004
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COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 0.21 0.21

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FILE LAST UPDATED: 22 Apr 2004 (20040422/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s washing (4w) detergent composition
142921 WASHING
13293 WASHINGS
153703 WASHING
(WASHING OR WASHINGS)

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          73145 DETERGENT
          64517 DETERGENTS
         100526 DETERGENT
                  (DETERGENT OR DETERGENTS)
         614697 COMPOSITION
         271551 COMPOSITIONS
         881126 COMPOSITION
                  (COMPOSITION OR COMPOSITIONS)
        1275100 COMPN
         509980 COMPNS
        1560450 COMPN
                  (COMPN OR COMPNS)
        1993764 COMPOSITION
                  (COMPOSITION OR COMPN)
           9878 DETERGENT COMPOSITION
                  (DETERGENT(W)COMPOSITION)
L1           69 WASHING (4W) DETERGENT COMPOSITION

=> d ti 1-10

L1   ANSWER 1 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Liquid dish-washing detergent compositions

L1   ANSWER 2 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Fusion proteins of α-amylases from Bacillus with improved washed
     performance and their use in detergents

L1   ANSWER 3 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Contaminated surface polishing-washing detergent
     composition containing carbonized rice bran and phenolic resin

L1   ANSWER 4 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Detergent compositions with good scale-removing properties

L1   ANSWER 5 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Low-foaming detergent compositions with good detergency for linen
     suppliers

L1   ANSWER 6 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Washing of fabrics stained with blood with alkaline detergents

L1   ANSWER 7 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Detergent compositions containing inorganic salts and useful for washing
     of beer and beverage bottles

L1   ANSWER 8 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Detergent compositions for jet washing with controllable viscosity and
     freedom from dripping

L1   ANSWER 9 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Peroxide-based bleaching laundry dish washing detergent
     compositions

L1   ANSWER 10 OF 69  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Car washing detergent composition


=> s l1 and amine
         244089 AMINE
         233051 AMINES
         375309 AMINE
                  (AMINE OR AMINES)
L2            9 L1 AND AMINE
```

=> d ibib abs hitstr 1-9

L2 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:311430 CAPLUS
DOCUMENT NUMBER: 130:339737
TITLE: Alkaline detergent for beverage and food industry and its use
INVENTOR(S): Grajecki, Christiana; Schmalz, Dietmar
PATENT ASSIGNEE(S): Dipl.-Ing. Ulrich Grajecki (G.m.b.H. und Co.), Germany
SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19749964	A1	19990506	DE 1997-19749964	19971104

PRIORITY APPLN. INFO.: DE 1997-19749964 19971104
OTHER SOURCE(S): MARPAT 130:339737
AB Alkaline detergents for cleaning food and beverage containers contain 0.0001-1.0% HCHO or HCHO generator and 0.0001-1.0% R1R2R3N (R1, R2, R3 = H, benzyl C1-22-alkyl, or amino- and/or imino-substituted C1-10-alkyl; R1R2 together with the N may form a 5- or 6-membered heterocyclic ring) as microbicides. The compns. are especially suitable for cleaning polyester bottles at low temps. An example of a concentrate is based on water 44.67, hexamethylenetetramine 12.00, Na cumenesulfonate 12.00, Plurafac LF 131 10.00, Pluronic 3.00, N,N-bis(3-aminopropyl)dodecylamine 18.33, and tartrazine 1.30%. This concentrate (0.05%) is added to 2% aqueous NaOH to form a
cleaning composition which is effective at 20°.

L2 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:686703 CAPLUS
DOCUMENT NUMBER: 123:59685
TITLE: Machine dishwashing method employing a metallo catalyst and enzymic source of hydrogen peroxide
INVENTOR(S): Moens, Marnix Karel Christiane
PATENT ASSIGNEE(S): Procter and Gamble Co., USA
SOURCE: PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9423637	A1	19941027	WO 1994-US3169	19940323
W: CA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2160231	AA	19941027	CA 1994-2160231	19940323
EP 692947	A1	19960124	EP 1994-913945	19940323
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
US 5670468	A	19970923	US 1995-537652	19951010

PRIORITY APPLN. INFO.: EP 1993-870066 19930409
WO 1994-US3169 19940323
OTHER SOURCE(S): MARPAT 123:59685
AB The title method, which prevents staining of the surfaces of dishwashing machines, plastic (e.g., polypropene) containers, etc., by colored food soils such as tomato or black currant juice, involves **washing** with a **detergent composition** containing a metallo catalyst selected from a metallo porphin (e.g., ferric tetrasulfonated

tetraphenylporphin), a metallo porphyrin, a metallo phthalocyanine, and their water-soluble or water-dispersible derivs., an enzymic system capable of generating H2O2 (e.g., glucose and glucose oxidase), an **amine** base catalyst stabilizer (e.g., imidazole), and a polymer [e.g., polyethylene glycol, poly(vinylpyrrolidone), or poly(vinyl alc.)] capable of reducing the deposition of catalyst onto articles in the wash.

L2 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1986:209204 CAPLUS
DOCUMENT NUMBER: 104:209204
TITLE: Laundry additive
INVENTOR(S): Koester, Klaus; Carduck, Franz Josef; Wilsberg, Heinz Manfred; Puchta, Rolf
PATENT ASSIGNEE(S): Henkel K.-G.a.A., Fed. Rep. Ger.
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3422055	A1	19851219	DE 1984-3422055	19840614
EP 164703	A2	19851218	EP 1985-107057	19850607
EP 164703	A3	19860402		
EP 164703	B1	19900117		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 61012796	A2	19860121	JP 1985-129081	19850612
ES 544107	A1	19860116	ES 1985-544107	19850613
CA 1242949	A1	19881011	CA 1985-483943	19850613

PRIORITY APPLN. INFO.: DE 1984-3422055 19840614

AB Laundry additives, easily soluble in cold water and cold washing liquors, are prepared which comprise a mixture of components and, optionally, additives embedded in organic, flexible, film-forming, water-soluble polymers. The mixture contains ≥2 of the following components: (a) ≥1 nonionic surfactant optionally containing an antigelling agent, (b) ≥1 activator for a per compound, (c) ≥1 N-containing compound selected from quaternary ammonium compds. with 1 C10-20 alkyl or alkenyl group as well as C1-4 alkyl groups, adducts of 1-6 mols ethylene oxide and 1 mol primary C10-16 alkyl- or alkenylamine, and compds. RNHCH2CH2CO2Na (R = C10-18 alkyl or alkenyl). Thus, a solution was prepared at 100° from water 90, poly(vinyl alc.) (mol. weight 15,000 83% saponified) 39, and copolymer (mol. weight 22000, 86% saponified) of vinyl alc. and internal plasticizing units using 39 g and mixed with glycerol 20, polyethylene glycol (mol. weight 4000) 4, methyl cellulose 4, and cellulose fibers (≤1 mm) 4 g. This mixture was kneaded at 40° with a paste prepared at 50° from (Ac2NCH2)2 97, ethoxylated (7 mols) (C14-15) oxo alcs. 104, C14H29NMe3Br 37, 50% aqueous ethylenediaminetetrakis(methylenephosphonic acid) hexa-Na salt solution 12, HOCHMeCH2OH 37, glycerol 37, ethoxylated (2 mols) oleyl-cetyl alc. 11, and poly(dimethylsiloxane) 6 g. The resulting composition was passed between rolls heated at 70° to give a 0.7-mm film containing 6% water. The film was cut into pieces (25 cm long, 16 cm wide) for use as a laundry additive which improved the **washing** efficiency of **detergent compns.**

L2 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1984:553875 CAPLUS
DOCUMENT NUMBER: 101:153875
TITLE: Fabric **washing** process and **detergent composition**
INVENTOR(S): Davies, James Francis

PATENT ASSIGNEE(S): Unilever PLC, UK; Unilever N. V.
SOURCE: Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 113978	A1	19840725	EP 1983-307640	19831215
EP 113978	B1	19870826		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
AU 8322364	A1	19840621	AU 1983-22364	19831213
AU 551234	B2	19860424		
ZA 8309296	A	19850731	ZA 1983-9296	19831214
AT 29151	E	19870915	AT 1983-307640	19831215
NO 8304649	A	19840618	NO 1983-4649	19831216

PRIORITY APPLN. INFO.: GB 1982-36003 19821217
EP 1983-307640 19831215

AB Builder particles for use in particulate detergent compns. comprise an alkylbenzenesulfonate (dispersant) and alkali metal or **amine** salts of saturated fatty acid containing ≥16 C atoms. Thus, particles comprising 2 parts Na salt of a mixture of C16 and C18 fatty acids and 1 part Na dodecylbenzenesulfonate [25155-30-0] gave effective softening of hard water at .apprx.20°. Particles containing only the soap had little softening effect in hard water.

L2 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1979:40161 CAPLUS
DOCUMENT NUMBER: 90:40161
TITLE: Washing of a textile printing material made from acetate or triacetate fibers
INVENTOR(S): Libkind, R. M.; Lazovatskaya, Zh. B.; Anishchuk, E. N.; Bedina, Zh. A.
PATENT ASSIGNEE(S): USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1978, 55(41), 110.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 631576	T	19781105	SU 1976-2365339	19760524

PRIORITY APPLN. INFO.: SU 1976-2365339 19760524

AB The degree of whiteness of the title material is increased by washing successively with H2O and with H2O containing 1-2 g/L polyoxyethylene glycol derivs. of C10-13 synthetic aliphatic **amines** (containing 14-18 OCH2CH2 groups) for 75-100 min.

L2 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1977:173047 CAPLUS
DOCUMENT NUMBER: 86:173047
TITLE: Bleeding dye composition soluble in water and nonpolar solvents
INVENTOR(S): Kuhn, Hans Heinrich; Hauser, Peter Jacob
PATENT ASSIGNEE(S): Deering Milliken Research Corp., USA
SOURCE: Ger. Offen., 12 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2638542	A1	19770303	DE 1976-2638542	19760826
CA 1081906	A1	19800722	CA 1976-259534	19760820
GB 1497017	A	19780105	GB 1976-35462	19760826
FR 2322908	A1	19770401	FR 1976-26287	19760831
FR 2322908	B1	19810320		
BE 845749	A1	19761231	BE 1976-170271	19760901
DK 7603952	A	19770303	DK 1976-3952	19760901
DK 147395	B	19840716		
DK 147395	C	19850204		
NL 7609737	A	19770304	NL 1976-9737	19760901
JP 52030821	A2	19770308	JP 1976-104365	19760902
JP 59033622	B4	19840816		
US 4113721	A	19780912	US 1977-815122	19770713

PRIORITY APPLN. INFO.: US 1975-609369 19750902

AB Azo and triarylmethane dyes which are easily and completely removed from synthetic and natural fiber textiles by **washing** in an aqueous **detergent composition** and by dry cleaning are manufactured by treating a aromatic **amine** with a mixture of ethylene oxide and propylene oxide to form a polyether and coupling with an aromatic diazonium compound containing a sulfo group or condensing with a formylbenzenesulfonic acid derivative under acid conditions followed by oxidation Thus, m-MeC6H4N(CH2CH2OH)2 10 was treated with a mixture of ethylene oxide 136 and propylene oxide 180 kg to give a polyether [62534-67-2] which was coupled with 2,5-(NaO3S)2C6H3N2+ [62502-15-2] to give a yellow dye solution from which the dye could be isolated by distilling the H2O.

L2 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1973:480674 CAPLUS
DOCUMENT NUMBER: 79:80674
TITLE: 3-(Acyloxy)-2-hydroxypropyltrialkylammonium compounds as softeners in detergents
INVENTOR(S): Nikolaus, Peter; Ecker, Hans W.
PATENT ASSIGNEE(S): Henkel und Cie. G.m.b.H.
SOURCE: Ger. Offen., 34 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2164741	A1	19730712	DE 1971-2164741	19711227

PRIORITY APPLN. INFO.: DE 1971-2164741 19711227

AB Fabric-softening properties of conventional detergent compns. were improved by addition of 5-20% of a 3-(acyloxy)-2-hydroxypropyltrialkylammonium compound formed by the reaction of a dicarboxylic acid and a tertiary **amine** with epichlorohydrin. Thus, heating a solution of 0.30 mole oxalic acid [144-62-7] and 0.30 mole epichlorohydrin [106-89-8] in 250 ml iso-PrOH with 0.27 mole dimethyldodecylamine [112-18-5] at 60-5.deg. for 30 hr gave 3-oxaloxy-2-hydroxypropyldimethyldodecylammonium chloride (I) [41935-41-5]. 3,3'-Maloyldioxybis(2-hydroxypropylmethyldidodecylammonium chloride) (II) [41935-42-6] was similarly prepared from malonic acid [141-82-2] and methyldiododecylamine [2915-90-4]. Brushed cotton cloth after 5 **washings** with **detergent compns.** containing I or II had hand superior to compns. containing no I or II, or containing prior-art ammonium compds.

L2 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1972:477101 CAPLUS
DOCUMENT NUMBER: 77:77101
TITLE: Detergent preparation containing aminopolycarbamide resins
INVENTOR(S): Grand, Paul Sheldon; Wixon, Harold Eugene
PATENT ASSIGNEE(S): Colgate-Palmolive Co.
SOURCE: Ger. Offen., 70 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2155224	A	19720518	DE 1971-2155224	19711106
US 3703480	A	19721121	US 1970-90133	19701116
US 3726815	A	19730410	US 1970-90154	19701116
AU 7134526	A1	19730419	AU 1971-34526	19711013
CA 970909	A1	19750715	CA 1971-125548	19711019
GB 1357960	A	19740626	GB 1971-49376	19711025
BE 775158	A1	19720301	BE 1971-110341	19711110
CA 955390	A1	19741001	CA 1971-127541	19711112
AT 322708	B	19750610	AT 1971-9765	19711112
IT 986008	A	19750110	IT 1971-54076	19711113
ES 397034	A1	19750416	ES 1971-397034	19711115
SE 401608	C	19780831	SE 1971-14616	19711115
NL 7115801	A	19720518	NL 1971-15801	19711116
FR 2114751	A5	19720630	FR 1971-40963	19711116
BR 7107620	A0	19730220	BR 1971-7620	19711116
US 3832310	A	19740827	US 1972-308885	19721122
US 3875071	A	19750401	US 1972-308884	19721122
US 4312855	A	19820126	US 1977-760619	19770114

PRIORITY APPLN. INFO.: US 1970-90133 19701116
US 1970-90154 19701116
US 1972-308883 19721122

AB A N-methylbis(2-aminopropyl)**amine**-urea resin (I) [35705-32-9] having the repeating unit (CH2)3NMe(CH2)3NHCONH, a 1,4-bis(3-aminopropyl)piperazine-urea resin [35705-33-0], or a similar resin is added to detergent compns. containing bactericides (e.g., 2-pyridinethiol 1-oxide salts, salicylanilides, halogenated bisphenols), fungicides (e.g., ethylene thiourea), uv light absorbers (e.g., hydroxybenzophenones), fluorescent whiteners (e.g., stilbenes, pyrazolines, or styrylnaphthoxazoles), fabric softening agents (e.g., dimethyldi(hydrogenated tallow alkyl)ammonium chloride), and/or other additives to increase the amount of each additive remaining on hair, skin, or textiles after **washing** with the **detergent compns.** and rinsing. Thus, after being dipped in 8.96 g water containing 0.04 g 2-pyridinethiol 1-oxide Zn salt and 0.5% I and then rinsed, a gelatin test wafer contains 122 μg of the Zn salt, compared with 40 μg when the solution contains no I.

L2 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1969:482933 CAPLUS
DOCUMENT NUMBER: 71:82933
TITLE: Fabric softening agents
INVENTOR(S): Koebner, Adolf; Potts, Herbert A.
PATENT ASSIGNEE(S): Marchon Products Ltd.
SOURCE: Brit., 5 pp.
CODEN: BRXXAA
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1161552		19690813	GB	19660128

AB Certain diquaternary diammonium salt surfactants are effective softeners in aqueous rinse solns. for fabrics and fibers. The salts are soluble in H2O to the extent of ≥0.1 g./l. at 20°. Useful aqueous compns. contain the above salt 2-10, cationic surfactants ≥3 and nonionic surfactants 1-5 weight %. Thus, a solution of 285 g. dimethyltallow-**amine** (I) (tallow = a mixture of cetyl and stearyl groups derived from tallow (fatty acids) in 500 g. iso-PrOH had .apprx.100 ml. 10N HCl added to neutralize the **amine.** After addition of 93 g. epichlorohydrin, the mixture was stirred at 60° for 6 hrs., a further addition of 285 g. I made and the mixture again stirred for 6 hrs. at 60°. This gave a 50-5% aqueous solution of N,N,N',N'-tetramethyl-N,N'-ditallow-2-hydroxy-1,3-propylenediammonium dichloride (II) from which free **amine** was removed by addition of Me2SO4. A mixture of II 5, lauric monoethanolamide 2, iso-PrOH, 5, and H2O 88 weight % had an excellent softening effect on fabrics when added to the final rinse after **washing** with alkylbenzenesulfonates or alkylsulfonate **detergent compns.**

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(21) International Application Number: PCT/US97/24224

(22) International Filing Date: 19 December 1997 (19.12.97)

(71)(72) Applicant and Inventor: SUGERMAN, Gerald [US/US]; 8 Cambridge Drive, Allendale, NJ 07401 (US).

(74) Agent: FIDLER, Roger, L.; 163 South Street, Hackensack, NJ 07601 (US).

(81) Designated States: AU, BR, CA, HU, JP, MX, NO, RU, SE, SG, TR, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: LOW ENVIRONMENTAL TOXICITY LATEX COATINGS

(57) Abstract

Combinations of nonvolatile reactive amines, and hydroxyl bearing, unsaturated esters and/or ethers and/or ether–esters (and/or combinations of non–hydroxyl bearing, unsaturated esters and/or ethers and/or ether–esters, and saturated hydroxyl bearing etherified and/or esterified oligomeric glycols and/or oligools), as replacements for conventionally employed volatile amines and/or ammonia as neutralizers, and organic solvents as coalescents respectively, has been found to enable the production of economical, low to no VOC acrylic and vinyl copolymer latex based coatings, paints, and inks. Further enhancement may be had by substitution of hypersurfactants, in place of conventional soaps and/or dispersants and/or detergents, in combination with the aforementioned nonvolatile reactive amines, particularly as particulate dispersants in pigmented and/or reinforced coatings.

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LOW ENVIRONMENTAL TOXICITY LATEX COATINGS

Background of The Invention:

The use of ammonia and/or volatile amines as neutralizing agents and/or stabilizers, and of alcohols, glycols, and glycol monoethers and monoesters, often in combination, at levels to 40% by volume (exclusive of water) has been employed for more than fifty years to achieve the coalescence of latex solids in acrylic, polyvinyl acetate and related copolymer resins based coatings. The volatilization of these conventional neutralizers, and coalescing components, after achieving film coalescence is normally required in order to inhibit the resultant film's breakdown (reversion) in the presence of humid environments, and to provide acceptable wear and stain resistance to the dried film.

Recent concerns regarding the environmental degradation (predominantly low level ozone formation), and the health and fire hazards associated with exposure to ammonia, volatile amines and volatile organics (VOCs), has led to increasingly strict regulatory limitations on the nature, and proportions, of VOCs which may be employed in coatings. One technique that has been employed in order to comply with said limitations in latex coating applications is the development of self coalescing latex resins which require no coalescents. However, to date, such materials have had the disadvantage of being limited to low Tg film formers with poor performance properties.

Subject of The Invention:

This invention teaches the use of low levels of combinations of nonvolatile reactive amines, in combination with hydroxyl

bearing unsaturated esters and/or ethers and/or ether-esters, and/or non-hydroxyl bearing unsaturated esters and/or ethers and/or ether-esters and incompletely etherified and/or esterified oligomeric glycols and/or oligools as partial or full replacements for conventionally employed volatile amines and/or ammonia as neutralizers, and organic solvents as coalescents, respectively, in latex resin applications. This invention has the advantage of reducing emissions and enhancing the performance of films produced from conventional latex resins, and when employed in conjunction with certain types of hypersurfactants (cf. Table 5) also upgrades pigment and/or extender dispersion, and reduces grind times in particulate containing variants; thus enhancing plant and energy use efficiencies. Synergistic performance enhancement, and VOC reduction in latex resins may be attained via the employment of the aforementioned technologies in combination. Partial replacement of either or of both of the aforementioned components by the alternatives of this invention is shown to provide lesser, but still desirable benefits.

Preferred Embodiment of The Invention

The non-volatile reactive amines useful in the practice of this invention have vapor pressures below 0.1 mm Hg at 25°C, contain at least one basic nitrogen, and at least one carbon to carbon double bond, and/or a transition metal ligand, and contain no more than twelve carbon atoms per basic nitrogen atom. Those more preferable contain one or more (meth)acryl and/or N-vinyl ligands, and those most preferable have a water solubility

exceeding 2% at 25°C. Specific examples of such useful non-volatile reactive amines are given in Table (1). These examples are intended to be illustrative rather than exhaustive of the scope of useful materials.

TABLE I

(1A) N-vinyl pyrrolidone

(1B) N,N,N'-tris (2-butenyl), ethylene diamine

(1C) N', methyl-1, 3-propylene diamine mono 2- propenamide

(1D) N, 2-propenyl, bis (2-hydroxy)propyl amine

(1E) N, 2-propenyl, N'- (2-hydroxy)ethyl, hexamethylene triamine

(1F) 4-(N, 3-hydroxypropyl, N-vinyl) 2-amino ethyl 2-butenoate

(1G) 2-[N,-(2-oxa-cyclopentadienyl)] amino acetic acid ethyl ester

(1H) 4-(N,N bis vinyl) 1,3-pentanediol

(1I) tetraethylene glycol mono 3-(N, ethyl) amino, 2-(methyl) 2-propenoate

(1J) N,N-divinyl glutamic acid 2-propenyl ester

(1K) 6-(N,N bis vinyl) hexanoic acid ethyl ester

(1L) Titanium IV tetrakis N, 2-aminoethyl ethanolato

The preferred types of the hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters useful in the practice of this invention are those having vapor pressures below 0.1 mm Hg at 25°C, which are capable of air initiated, oxidative oligomerization and/or polymerization derived non-reversible

bonding, under normal latex application conditions, to film component(s) and/or to substrate, in order to maximize coating properties via crosslinking the resulting latex thereby minimizing its (post film formation) environmental sensitivity. Examples of such unsaturated esters and ether and ether-esters as are useful in the practice of the instant invention are provided in Table II. These examples are intended to be illustrative rather than exhaustive of the scope of useful materials.

Table II

(2A) trimethylol propane bis (2-methyl)-2-propenoate ester

(2B) sorbitan tetrakis 2-butenoate ester

(2C) bis pentaerethyritol 2-propenolato, tris 2-propenoate ester

(2D) hexanoic acid 6-hydroxy, (2-propenoato)ethyl ester

(2E) citric acid mono isodecenyl ester

(2F) malic acid bis cinnamyl ester

(2G) 3-heptanoyl furfuryl alcohol

(2H) 1,2,3-propanetriol 1-vinyl ether, 2-phenyl carboxylate ester

(2J) trimeric 2-butenediol mono (methyl) glutarate ester

(2K) ethoxylated (4) bis phenol A mono 2-propenoate ester

The preferred types of the non-hydroxyl bearing unsaturated esters and/or ethers and/or ether-esters useful in conjunction with the practice of this invention are those having vapor pressures below 0.1 mm Hg at 25^{0}C, which are capable of air initiated oxidative oligomerization and/or polymerization, and non-reversible bonding, under normal latex application conditions, to film component(s) and/or to substrate, in order to maximize coating

properties via crosslinking the resulting latex thereby minimizing its (post film formation) environmental sensitivity. Examples of such non- hydroxyl bearing unsaturated esters and ether and ether-esters as are useful in the practice of the instant invention are provided in Table III. These examples are intended to be illustrative rather than exhaustive of the scope of useful materials.

Table III

(3A) trimethylol propane bis (2-methyl)-2-propenoate ester, mono vinyl ether

(3B) 1,2,3-propane triol tris 2-butenoate ester

(3C) penta erethyritol 2-propenolato, tris 2-propenoate ester

(3D) hexanoic acid 6-acetoxy, (2-propenoato)ethyl ester

(3E) fumaric acid bis isodecyl ester

(3F) maleic acid bis cinnamyl ester

(3G) furoic acid vinyl ester

(3H) 1,2,3-hexanetriol 1,2-bis vinyl ether, phenyl carboxylate ester

(3J) trimeric 2-butene-1,4-diol bis propionate ester

(3K) ethoxylated (4) bisphenol A bis 2-(methyl)-2-propenoate ester

The preferred types of the incompletely etherified and/or esterified oligomeric glycols and/or oligools useful in the practice of this invention are those having vapor pressures below 0.1 mm Hg at 25°C, which are oligomers of two to 4 carbon diols, and of three to six carbon triols, wherein each of the ether and/or ester ligands contains five or fewer carbon atoms per oxygen.

Examples of such incompletely etherified and/or esterified oligomeric glycols and/or oligools as are useful in the practice of the instant invention are provided in Table IV. These examples are intended to be illustrative rather than exhaustive of the scope of useful materials.

Table IV

(4A) penta (ethylene glycol) mono methyl ether

(4B) tetra (1,4-butylene glycol) mono (2-methyl) butyrate

(4C) 1-hydroxy-2,5-bis methyl-3,6,9,12-tetraoxa tetradecane

(4D) 4-oxaheptane-1,2,6,7-tetraol mono acetate, mono 2-propyl ether (mixed isomers)

(4E) ethoxylated (6) 1,2,4-butanetriol bispropanoate (mixed isomers)

(4F) tris 1,2,5-n pentane triol tetraethyl ether (mixed isomers)

(4G) tris (1,3-propane-diol) mono isopentyl ether

(4H) 1,2- bis (2- hydroxy ethoxy ethyl) 1,2,3-propane triol

(4J) polyethylene glycol (300) mono amyl ether

(4K) tris neopentyl glycol mono n-propyl ether

The surfactants most useful in the practice of this invention are those having vapor pressures below 0.1 mm Hg at 25°C, which are capable of non-reversible bonding, under normal processing conditions, to film component(s) and/or substrate in order to maximize coating properties, while minimizing post film formation environmental sensitivity, and which serve to efficiently wet substrates coated, and to disperse particulates, if any, employed in the formulated latex coating. Among the surfactants found to be

useful in the practice of this invention are amphoteric detergents, and certain organometalics based on tetravalent titanium or zirconium. These last have been found to contribute significantly to substrate adhesion and improved corrosion resistance on wood, metalic and ceramic substrates, and to be particularly useful in maximizing color intensities of carbon black, azo and phthalocyanine based pigments. Specific examples of the preferred types of hypersurfactants are given in Table V. These examples are intended to be illustrative rather than exhaustive of the scope of useful materials.

Table V

(5A) 12-N,N,N-trimethylaminododecanoato

(5B) N-(pentakis oxyethylene sulfato) triethylene diamine

(5C) p-[6-N(methyl) morpholino]octyl phenyl phosphonic acid

(5D) N,N,N-triethyl glutamic acid

(5E) titanium 4 octyl, [(tris octyl) diphosphato

(5F) titanium 4 oxoethylene, bis (dodecyl) phenylsulfonato

(5G) oxy [bis titanium 4 (bis tridecyl) diphosphate]

(5H) zirconium 4 tetraethylene glycol monomethyl ether, tris (tetraethylene glycol monomethyl ether) diphosphato

(5J) zirconium 4, bis w-N,N-(dimethyl)amino octanoato, 1,4-cyclohexanediolato

(5K) triethylene glycol diolato, bis [zirconium 4 tris (octyl) phosphate]

Those skilled in the art shall no doubt be capable of subverting the teachings of this invention via the substitution of

functionally equivalent materials, e.g. employment in combination of hydroxylated and non-hydroxyl bearing esters (ether-esters) optionally in combination with partially esterified and/or etherified glycols, and or polyols, in place of either component (set) alone, (as is amply demonstrated in example No. 4.), or of unsaturated analogous unsaturated amides, for a portion of the aforementioned unsaturated ethers, esters or ether-esters disclosed above, and/or fluorination of one or more of the species of components heretofore described as necessary to the successful practice of this invention; however such non-critical modifications, and/or combinations of relevant species types, must be considered as within the scope of this disclosure.

Further amplification of the scope and utility of the instant invention to latex coating applications in inks, paints and stains shall be found to be illustrated by the content(s) of examples 1 through 5. Said examples are intended to be illustrative rather than exhaustive of the extraordinarily diverse applicability of the instant invention.

Example #1

This example teaches the superiority of the present invention versus the prior art with respect to the productivity, VOC emissions, and performance quality in a masonry sealer application.

A masonry sealer formulation was prepared by the sequential dispersion of the indicated components (pigment dispersion times and grind quality achievement was noted). The resulting sealer was applied via roller to smooth surface, ten day old, 8" X 18" X 1"

thick concrete castings, at an application rate of one gallon per 400 square foot, dry time (to touch) was measured under conditions of 72° F and 85% humidity. After 240 hours of drying @ 72° F and 85% humidity, sealer performance was measured by weighing the dry casting, then impounding a 6" depth of water, or alternatively 6% salt solution, on such a casting for twenty four hours, then draining and weighing the drained casting. The weight percent of water, and independently that of 6% salt solution, adsorbed by said castings were used to determine sealer efficacy. The results of this study are given in **Table No. 1.**

Formulation: in parts by weight; (in order of addition) water 200.0; neutralizer[1], as shown; surfactant[a], as shown, biocides[2], **18.50; hydroxy ethyl cellulose, 5.00; potassium tris polyphosphate,** 2.00; defoamer[2], 1.00; coalescent[a], as shown; ultramarine blue pigment, 0.25; rutile titanium dioxide, 200.0, American process zinc oxide, 25; platey talc, 250; water, 49.98; AC-625 Acrylic latex resin[3], 352.0; defoamer[2], 0.98; surfactant[b], coalescent[b], as shown,; water, 24.99; and sodium nitrite 2.30; thixotrope[4], as shown (required) to adjust system viscosity to 85-90 KU at 75° F.

Table No. 1

Formulation	1	2	3	4	5
neutralizer	amp-95/1.98	1B/2.00	1H/1.80	1G/2.20	1D/1.78
surfactant(a)	Tamol 850[7]/14.85	5A/1.80	5E/1.75	5K/1.55	5H/1.50
coalescent(a)	Propylene glycol /34.56	none	none	4J/4.50	none
surfactant(b)	Triton N101[3]/2.20	none	5B/1.00	none	5D/1.25
coalescent(b)	Texanol[8]/9.88	2A/16.42	3A/12.60	3F/18.55	2H/11.70

Formulation	6	7	8	9	10
neutralizer	ammonia/1.00 1L/1.00	1B/1.00 ammonia/1.00	1H/1.80 AMP-95/1.00	1G/1.20	1D/1.78
surfactant (a)	Tamol 850[7]/14.85	5A/1.80	5E/0.75	5K/1.55	5H/0.75
surfactant (b)	Triton N101[6]/2.20	none	Triton N101 /2.20	none	5D/1.25
coalescent (a)	Propylene glycol /34.56	none	none	4J/4.50	Propylene glyco /17.88
coalescent (b)	Texanol[8] 19.98	2A/16.42	3A/12.60	3F/18.55	2H/5.85

Formulation	VOC g/l[5]	Dispersion time hr.	Grind Hegman	Water adsorption g.	Salt water adsorption g.
1	124	3.4	4	46	61
2	8	0.7	6	27	32
3	3	0.6	6	21	28
4	5	0.7	5	24	27
5	4	0.6	6	25	30
6	112	3.1	4	37	48
7	10	0.7	6	32	42
8	3	2.4	5	27	38
9	6	0.7	5	24	27
10	36	1.8	6	31	39

Notes: a) As shown; 1) A combination of 3.5 parts of Nuosept 95, and 15 parts of Nuocide 404D, Huls Corp. were employed; 2) Defo 806-102; Ultra Inc. 3) AC-625, Union Carbide Corp.; 4) Rhevis CR, Rhevis Corp.5) via EPA Method 24GC; 6) Rohm and Haas Corp.; 7) Eastman Kodak Inc.

The efficacy of the coalescent systems of the instant art in producing a less water and salt permeable, acrylic latex based masonry seal coating, is compared to a conventionally coalesced counterpart, Formulation No. 1, and is obvious from the preceding data. VOC emissions reduction and improvement in both productivity and dispersion level achieved are likewise self evident.

Example #2

This example teaches the superiority of the present invention versus the prior art with respect to the productivity, VOC

emissions, and performance quality in a direct to metal, maintenance coating application.

Direct to metal coatings were prepared by the sequential dispersion of the indicated components (pigment dispersion times were noted). The resulting coating was spray applied to sandblasted smooth surface 24" X 8" carbon steel test panels at application rate of one gallon per 250 square feet. After 120 hours of drying @ 72° F and 85% humidity, edge sealing and scribing, the coatings' corrosion resistance performance were each measured by QUV cabinet exposure [cyclic exposure to UV radiation, 4% saline solution, and varying temperature (25°-80° C)].

Formulation: in parts by weight (in order of addition): water, 50.0; neutralizer, as shown; Surfactant[a], as shown, biocide[1], 4.00; oxidized polyethylene wax, 4.00; (disperse wax) polyurethane thixotrope[2], as shown; defoamer[3], 2.00; coalescent[a], as shown, ultramarine blue pigment, 0.25; rutile titanium dioxide, 125; zinc aluminate 150; Acrylic latex resin[4], 64.0; (disperse particulates to Hegman 7.5+). Neutralizer, is shown; acrylic latex resin[4], 564.0; defoamer[2], 0.98; surfactant[b], coalescent[b], as shown; water, 16.00; arid sodium nitrate 2.30. Thixotrope[2], (as required) to adjust system viscosity to 80-85 KU at 75° F . The control coating required 3.7 hours to disperse to a Hegman grind gauge reading of 7+, whereas each of the instant art coatings achieved said fineness of grind in less than one half hour. The results of this study are given in **Table No. 2**

Table No. 2

Formulation	1	2	3	4	5	6
neutralizer	DMAMP-80[5]/12.5	1A/4.00	1C/1.80	1E/2.20	1J/1.78	DMAMP-80[5]/6.25
surfactant(a)	Triton CF10[6]/10.00	5D/1.80	5F/1.75	5C/1.55	5J/1.50	1A/ 2.00 Triton CF 10/5.00
thixotrope[2]	15.00	5.00	5.50	8.70	5.30	9.32
coalescent(a)	Diproylene glycol /34.60	4B/12.00	4E/10.5	4K/8.25	none	none
surfactant(b)	none	none	5A/1.00	Triton CF10[6].4.0	none	5D/1.25
coalescent(b)	PmPE[7]/44.60	2A/16.42 4A/7.45	3A/12.60	3F/18.55	2H/14.70	2H/14.70
thixotrope[2]	21.40	3.20	1.50	0.70	2.30	1.95

Formulation	7	8	9	10	11	12
neutralizer	DMAMP-80[5]/12.5	1A/4.00	1C/1.80	1E/2.20	1J/1.78	DMAMP 80[5]/6.25
surfactant (a)	Triton CF10[6]/10.00	5D/1.80	5F/1.75	5C/0.55	5J/1.50	Triton CF10/5.00
surfactant (b)	none	none	5A/1.00	Triton CF10[6]/2.0	none	5D/1.25
thixotrope[2]	15.00	5.00	5.50	8.70	5.30	9.32
coalescent (a)	Dipropylene glycol /17.3	PmPE[7] /22.60	4B/12.00	4E/10.5	4K/8.25	PmPE[7]/22.3
coalescent (b)	2A/ 8.81	2A/ 6.42	PmPE[7]	3F/ 18.55 4A/7.45	2H/14.70	2H/14.70
thixotrope[2]	18.90	6.20	4.50	3.70	2.30	6.95

Formulation	VOC g/l[8]	Initial gloss @60°	60° gloss @ 200hr. QUV	60° gloss @ 500 hr. QUV.	60° gloss @ 1,000 hr. QUV
1	232	82	76	31	film destroyed
2	9	91	87	82	76
3	11	93	90	88	80
4	8	87	86	82	61
5	10	88	86	85	84
6	13	84	80	66	59
7	72	85	79	46	12
8	57	80	76	51	18
9	28	87	84	72	63
10	7	88	86	84	78
11	8	92	90	87	85
12	77	85	80	75	48

Notes: 1) Nuosept 95,-Huls Corp. 2) Acrysol RM 2020, Rohm and Haas 3) Defo 3000; Ultra Inc. 4) HG 56, Rohm and Haas Corp. 5) 80%

2-N,N-dimethylamino-2-methyl propanol aq. 6) Union Carbide Corp. 7) propylene glycol mono phenyl ether. 8) via EPA Method 24GC

The efficacy of the coalescent systems of the instant art in producing a more environmentally resistant, acrylic latex based direct to metal coating, as compared to a conventionally coalesced counterpart, Formulation No. 1, is obvious from the preceding data. VOC emissions reduction, and improvement in productivity achieved are likewise self evident.

Example #3

This example teaches the superiority of the present invention versus the prior art with respect to productivity, VOC emissions, and performance quality in a polyvinyl acetate based interior flat architectural paint application.

Interior flat paints, were prepared by the sequential dispersion of the indicated components (pigment dispersion times, and dispersion efficacy were noted). The resulting coating was brush applied to unprimed drywall (gypsum sheet) @ 72° F and 80% humidity, coverage, stain removal, and scrubability performance were each measured after 7 days of drying 72+\- 2°F @ 65-80% humidity.

Formulation; in parts by weight; (in order of addition) water, 200.0; neutralizer[1], as shown; surfactant[a], as shown, biocides[2], 1.00; hydroxy ethyl cellulose, as shown; potassium tris polyphosphate, as shown; defoamer[3], 1.00; coalescent[a], as shown; ultramarine blue pigment, 0.25; rutile titanium dioxide, 250.0, water washed clay[4], 50.0; calcium carbonate[5], as shown; diatomite[6],

50.0; water, 49.98; PVA latex resin[7], 352.0; defoamer[2], 0.98; coalescent[b], as shown ; water, 100 .0;and sodium nitrite 2.30; thixotrope[8], as shown (required) to adjust system viscosity to 90-100 KU at 75° F.

The results of this evaluation are shown in **Table No. 3.**

Table No. 3

Formulation	1	2	3	4	5	6
neutralizer	28% ammonia aq. 6.05	1B/2.00	1H/1.80	1G/2.20	1D/1.78	28% ammonia 6.05
HEC(QP-4400)	5.50	1.20	1.35	1.25	1.40	1.35
surfactant(a)	Tamol 731/6.90 Triton N101/3.31	5E/1.80	5J/1.75	5C/1.55	5F/1.5	Tamol 731/6 Triton N101/3.31
coalescent(a)	Propylene glycol /51.95 Texanol/9.88	4A/6.00	4 F/7.00	4H/5.50	4E/7.00	4E/7.00
Calcite	50	150	125	150	140	50
coalescent(b)	none	2A/26.4	3C/12.60	3F/18.50	2J/11.90	2J/11.90
thixotrope[8]	3.5	3.0	3.1	2.7	2.4	3.9

Formulation	7	8	9	10
neutralizer	28% ammonia aq. 6.05	1B/2.00	1H/1.80	1H/1.80
HEC (QP-4400)	5.50	1.20	1.35	1.25
surfactant(s)	Tamol 731/ 6.9 Triton N101/ 3.31	Tamol 731/ 3.9 5J/1.0	5J/ 1.75	Tamol 731/ 6.9 Triton N101/ 3.
coalescent (a)	Propylene glycol 51.95	4A/6.00	Propylene glycol 51.95	4H/5.50
calcite	50	100	125	150
coalescent (b)	4E/2.00	2A/ 26.4	3C/ 12.60	3F/ 18.50
thixotrope[8]	3.5	3.0	3.1	2.7

Formulation	VOC g/l[9] hr.	Dispersion Time	Grind Hegman	Min.Coalescence temp °C	Scrubs[10]	Stain Removal[11]
1	199	2.4	4	47	410	6
2	8	0.4	5	34	1,740	9
3	3	0.6	6	32	2,025	10
4	5	0.6	6	36	1,960	9
5	4	0.5	5	30	2,230	10
6	15	2.2	4	31	785	8
7	190	2.4	4	43	850	7
8	9	0.9	5	35	1,140	8
9	188	1.1	5	45	890	7
10	8	2.4	4	37	1,310	8

Notes: 1) As shown; 2) Nuosept 95, Huls Corp.; 3) Defo 3000; Ultra Inc.. 4) 70C Huber Corp.5) Camel Carb., Cambel Corp.; 6) Diafil 530

viscosity of 65-70 KU, and the coating was applied by curtain coating on sanded but unprimed 4' X 8' X 0.25" laminate natural oak (on pine) substrate. The coated panels were force dried by passing same through a 180° F oven for 20 minutes, then cooled at ambient temperature (ca. 80° F) for 24 hours prior to evaluation, for abrasion and solvent resistance. to determine coating performance, efficacy. The results of this study are given in **Table No. 4.**

Table No. 4

Formulation	1	2	3	4	5	6	7	8
Part A: neutralizer	28% ammonia aq.	1A	1H	1H	1H	1B	1B	1B
Part B: formulation								
Texanol	8.00						4.00	4.00
diethylene glycol mono butyl ether	18.20						9.10	9.10
2A		12.05	6.00		6.00	6.00	6.00	
2C			4.40	10.70				
3B					4.20			6.00
4G			1.90	2.90	1.05	6.20		
4J								

Formulation	VOC g/l[1]	Abrasion resistance[2]	Solvent resistance[3]	Stain resistance[4]	Mix pot life hr.@ 80°F[5]
1	165	114	lifts	poor	7.5
2	3	31	slight softening	good	42
3	4	29	slight softening	fair	35
4	3	24	no change	excellent	40
5	3	26	no change	good	61
6	4	98	mod. Softening	fair	46
7	83	19	slight softening	fair	21
8	85	78	severe softening	poor	11

Notes: 1) By EPA Method 24GC; (formulations 2 through 7 produced 0 to negative VOC readings by EPA Methods 24, and 24A; 2)Tabor CS-10 wheel 1000 cycles; 3) 24 hr methyl ethyl ketone covered spot test; 4) 24 hr exposure to lipstick; 5) time to 10% loss of abrasion resistance in finished coating.

This example demonstrates, that the use of the combination of components cited as the basis of the instant invention, viz. That

Whittaker, Clark, and Daniels Inc. 7) Rhoplex 3077, Rohm and Haas Corp.; 8) Rhevis CR, Rhevis Corp. 9) via EPA Method 24GC. 10) ASTM method; 11) ASTM method.

The efficacy of the coalescent systems of the instant art in producing a more, scrub and stain resistant PVA latex based interior flat architectural coating as compared to a conventionally coalesced counterpart, Formulation No. 1, is obvious from the preceding data. VOC emissions reduction and improvement in both productivity and dispersion level achieved are likewise self evident, as is a considerable reduction in minimum coalescence temperature, without recourse to the use of low boiling, flammable solvent(s), normally employed to induce same.

Example #4

This example teaches the superiority of the present invention versus the prior art with respect to the productivity, VOC emissions, and performance quality in a force dried, clear, protective, two component acrylic latex cured - waterborne epoxy, wood cabinet coating.

Component A. neutralizing agent, as shown-3.5 PBW; sodium nitrite 0.15 and defoamer (Patcote 519-Patco Coatings Inc.) were admixed with 95.85 PBW of (Acrylic latex-Maincote AE 58), and said emulsion was subsequently mixed with 50 PBW of Component B, formulated by blending various additives, as shown, into 12.5 PBW of Genepoxy 370-H55- Daubert Chemical Co., and diluting as necessary with water to produce a total part B weight of 25 parts. Thixatrope[1], was added, as required, to provide an initial mix

nonvolatile reactive amines, in combination with hydroxyl bearing unsaturated esters and/or ethers and/or ether-esters, and/or non-hydroxyl bearing unsaturated esters and/or ethers and/or ether-esters and incompletely etherified and/or esterified oligomeric glycols and/or oligools as (partial or full) replacements for conventionally employed volatile amines and/or ammonia as neutralizers, and organic solvents as coalescents, respectively may be employed to substantially enhance the processability (pot life), mechanical and chemical resistance properties (abrasion and stain resistance respectfully) as well as attain VOC reduction in wood coatings. A further benefit of the instant invention as applied to wood coatings is that unlike conventionally coalesced waterborne coatings, e.g. formulation D-1 latex formulations based upon the teachings of this invention, e.g. formulations D-2 through D-7, do not cause significant grain rise, thereby virtually eliminating the necessity for intercoat sanding. These data also demonstrate that subsets of the preferred combination of components herein disclosed (e.g. formulations D-3,D-5, and D-6) may provide considerable benefits relative to their conventional counterparts, such as Formulation No. 1; however, omission of one or more of the components of the combination herein disclosed leads to inferior results as compared to the inclusion of the full compliment.

Example #5

This example teaches the superiority of the present invention versus the prior art with respect to the productivity, VOC emissions, and performance quality in waterborne flexographic inks.

A latex flexographic ink formulation, was prepared by the sequential dispersion of the indicated components (pigment dispersion times and grind quality achievement was noted). The resulting ink was applied via a #6 wire wound rod to bond paper, and permitted to dry. Dry time (to touch) was measured under conditions, of 72° F and 85% humidity. After 6 hours of drying @, 72° F and 85% humidity, heat seal resistance performance (face to face) was measured at 25 psig. and 2 seconds contact time) the results of this study are given in Table No. 5.

Formulation: in parts by weight; (in order of addition) E-2350 resin 267; neutralizer, as shown; surfactant, as shown; Defo 1020 defoamer 4.00 Ultra Inc.; coalescent[a], as shown; calcium lithol pigment 50% presscake, 400-Sun Chemical Corp.; Michemlube wax 5-Michelman Inc., water, as required in order to produce a viscosity of 27 seconds using a #2 Zahn cup. Relative dry ink color intensities were measured by integrating thin film reflectance spectra at 300-600 um wavelengths using a spectrophotometer after 48 hours of drying at the above conditions

Table No. 5

Formulation	1	2	3
neutralizer	28% ammonia aq, 2.00	1D/2.00	IH/1.40
surfactant	Tamol 850/4.95	5A/1.80	5E/1.75
coalescent	isopropanol/48	2A/10.5	2E/20.0
	Texanol/24	3C/15.5	
		4H/5.5	

Formulation	4	5	6
neutralizer	1F/2.00	1D/1.46	28% ammonia aq/2.00
surfactant	5K/1.55	5H/1.50	Tamol 850/ 4.95
coalescent	3C/25.0	3C/18.0	3C/18.0
		4H/7.0	4H/7.0

Formulation	VOC g/l[5]	Dry to touch time hr.	6 hr.Heat seal resistance °C	Relative color intensity.
1	144	3.4	86	1.00
2	4	0.7	154	1.42
3	3	0.6	172	1.27
4	5	0.7	104	1.08
5	4	0.6	167	1.39
6	7	0.6	122	1.03

Notes: The efficacy of the coalescent systems of the instant art in producing a faster drying, more strongly colored, and lower VOC acrylic latex based printing ink coating as compared to a conventionally coalesced counterpart are obvious from the preceding data, as are indications that incomplete application of the teachings of this disclosure may lead to inferior results. Note the deficiencies in the heat seal performance of formulation E-4 as compared to E-2, E-3, and E-5, the benefits of hyperdispersant use as indicated E-2 to E-5 vs. E-6.

Example #6

This example teaches the utility of the instant invention in the production of superior waterborne anti-scuff overprint coatings for graphic arts applications.

A 30% solution of water reducible styrene-acrylic copolymer resin in water was prepared by admixture of the indicated neutralizing agent-as shown, water, and Air Product Corp's Flexbond 28 resin. Thirty parts by weight (PBW) of the preceding solution, were admixed with 50 PBW of styrene- acrylic latex resin (Flexbond 285, Air Products Corp.), coalescent, and surfactant(s) -as shown, poly ethylene wax, 2 PBW, and sufficient water to dilute the system to 100 PBW.

The resulting coating was applied, in line on a high speed six color lithographic cold web press, to a solid four color print pattern, followed by in line infrared drying, and folding.

Measurements of VOC (by EPA Method 24), offset, and blocking limited maximum allowable impression rates (impressions/ minute [IPM]), were made. The results are given in Table 6.

Table 6

Formulation	1	2	3
neutralizer	28% ammonia/ 6.00	AMP 95[1]/ 8.00	AMP 95/ 8.00
coalescent (s)	isopropanol/ 12	isopropanol/ 12	2G/ 4.50
surfactant	Tamol 850/ 2.05	Tamol 850/ 2.05	5K/ 0.75
Formulation	**4**	**5**	**6**
neutralizer	1G/ 6.00	1G/ 6.00	1G/ 6.00
coalescent (s)	2G/ 4.50	2G/ 4.50	3C/ 3.65 4C/ 0.85
surfactant	Tamol 850/ 2.05	5K/ 0.75	2K/ 0.75
Performance	**1**	**2**	**3**
VOC -g/l.	131	146	27
max IPM (offset)	8,240	9,235	12,720
max IPM (block)	10,150	9,950	14,610
Performance	**4**	**5**	**6**
VOC -g/l.	3	4	4
max IPM (offset)	16,670	18,000[2]	18,000
max IPM (block)	17,130	18,000	18,000

Claims:

What we claim is:

1) Compositions of matter comprising:
essentially nonvolatile reactive amines;
hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters; and/or
combinations of non-hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters, and/or saturated hydroxyl bearing etherified and/or esterified oligomeric glycols and/or oligools.

2) Compositions of matter comprising:
volatile amines and/or ammonia neutralizers;
hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters; and/or
combinations of non-hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters, and/or saturated hydroxyl bearing etherified and/or esterified oligomeric glycols and/or oligools.

3) Compositions of matter comprising:
essentially nonvolatile reactive amines; and
organic solvent coalescents.

4) Compositions of matter as defined in Claims 1, 2 and 3 having as an additional component latex resin.

5) Compositions of matter as defined in Claims 1, 2, 3 and 4 having hypersurfactants as an additional component.

6) Compositions of matter as defined in Claim 5 in which the

hypersurfactants are derived from titanium or zirconium based organometalics.

7) Compositions of matter as in Claim 4 in which the latex resin is derived from poly vinyl acetate and/or acrylic and/or a copolymer thereof.